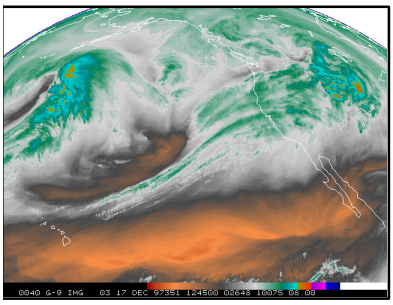
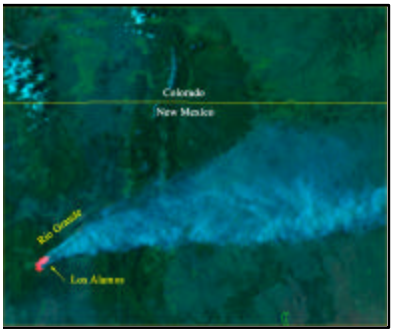
National Environmental Satellite, Data, and Information Service
Polar-orbiting Operational Environmental Satellite System

Polar K-N' Satellite



Atmospheric moisture during El Nino Winter Storms of December 1997



Fires at Los Alamos

The National Requirement: The Nation requires a system of polar-orbiting operational environmental satellites to provide an uninterrupted flow of global environmental data and information for a wide range of Federal agencies, state and local governments, and private users. This requires two satellites on orbit to allow for six-hour global coverage and to provide important global information used in numerical weather models.

NOAA's Response: Since 1960, NOAA has maintained a Polar-orbiting Operational Environmental Satellite (POES) system. The current polar program consists of five satellites designated as NOAA K-N'. NOAA-K was launched successfully in May 1998 and NOAA-L was launched successfully on September 20, 2000. Planning launch dates for the remaining POES satellites are NOAA-M, Summer 2002; NOAA-N, Summer 2004; and NOAA-N, Spring 2008.

Continuous global atmospheric temperature and humidity values from the POES satellites are critical inputs for quality mid-range (3-5 day) and long-range National Weather Service forecasts. POES satellites also monitor the global sea surface temperature indicating the location, onset, and severity of events such as El Nino as early as possible. Longer lead times of these impending events allow managers to activate plans to reduce the impact of floods, landslides, evacuations, and droughts for potential crop loss.

The high resolution imagery provided by POES satellites can detect volcanic eruptions, hurricane centers, and fires. Alaska, which is out of the range of GOES imagery, critically depends on POES images for short-term weather forecasts, to keep track of over 45 volcanoes for ash plumes, and to support scheduling of the FAA's heavy trans-polar freight and passenger flights. POES satellites monitor our ozone layer and detect the onset of the Antarctic Ozone Hole. They also supply critical data for our Nation's climate record and monitor the solar cycle and space weather. Finally, POES Search and Rescue instruments detect signals world-wide from air and marine craft in distress. This data is critical for the United States Coast Guard and other rescue agencies in pinpointing the location of downed craft. This system has aided in the rescue of more than 11,000 people over the last 20 years.

Financing: The FY 2003 Budget includes $122.9 million for the Polar-orbiting Operational Environmental Satellite system. This request represents a decrease of $16.4 million from the FY 2002 funding level. The FY 2003 request includes funding for the continued procurement of the NOAA M through N' satellites, instruments, launch services, and ground systems support to provide continuous global coverage until the converged National Polar-orbiting Operational Environmental Satellite System (NPOESS) becomes operational after 2008.